REMARKS

This is in response to the Office Action dated December 27, 2007. Applicants respectfully request reconsideration and allowance of the application in view of the above-amendments and the following remarks.

I. REQUEST FOR TELEPHONE INTERVIEW

Several unsuccessful attempts were made to reach the Examiner prior to filing the present amendment. If the claim rejections are maintained, Applicant respectfully requests a telephone interview to discuss the rejections under §§112, 102 and 103.

II. DRAWINGS

A. **Formal Drawings**

The drawings were objected to because letters and numbers are not well-defined.

Submitted herewith are formal, replacement sheets 1/8 through 8/8 that make the characters more clear and incorporate the changes submitted with the amendment filed March 5, 2007.

In addition, FIG. 1 is modified to replace the variables 131_0 to 131_{2n-1} and 151_0 to 151_{2n-1} with the variables 131_0 to 131_{2M-1} and 151_0 to 151_{2M-1} in order to match the variables used in the new paragraphs added to the specification with the amendment filed March 5, 2007.

B. **All Reference Characters are Mention in Description**

The Office Action objects to the drawings since they include reference characters not mentioned in the description.

However, the reference characters 132, 14, 152, 153, 154, etc. are mentioned in the description, for example in the paragraphs added with the amendment filed March 5, 2007. In addition, these paragraphs mention 131_0 to 131_{2M-1} and 151_0 to 151_{2M-1}.

Thus, all reference characters are believed mentioned in the description.

III. SPECIFICATION

The specification was objected to as lacking certain subtitles referred to in 37 C.F.R.1.77(b). Applicant notes that these subtitles are preferred but not required. In any case, the specification has been amended above to include additional subtitles.

These subtitles are in addition to the subtitles added with the preliminary amendment filed March 26, 2002.

IV. CLAIM REJECTIONS UNDER §112

A. **The Office Action**

Claims 1-21 were rejected under §112, second paragraph as allegedly being indefinite. Applicants respectfully traverse.

The Office Action suggests in claims 1, 12, 15, 16 and 20 it is not clear what is meant by "a bank of synthesis filters, having 2M parallel branches, M>2, each fed by source data and each comprising an expander of order M" or "a bank of analysis filters, having 2M parallel branches, each filters comprising a decimator of order M and filtering means."

The Examiner also asks, "What is a branch?

B. **The Claims are Definite**

The existing claims are definite and particularly point out and distinctly claim the subject matter. This subject matter would easily be understood by a person of ordinary skill in the art when looking at the existing claim language.

However, the independent claims are amended in an effort to make the language more readable. And various dependent claims are amended to be consistent with the independent claims. No amendments are made in view of the prior art.

A person of ordinary skill in the art, when referring to a bank of filters having "parallel branches" would understand the meaning of a "branch". Further, the specification clearly shows in FIG. 1 parallel branches of synthesis filters, wherein the branches are labeled 131_0 to 131_{2M-1}. The specification also clearly shows parallel branches of analysis filters that are labeled 151_0 to 151_{2M-1}.

Each synthesis filter branch 131_i includes a synthesis filter $F_i(z)$ and an expander 1312.

Each analysis filter branch 151_i includes an analysis filter $H_i(z)$ and a decimator 152.

The specification clearly states that the expander and decimator have an order of "M", where $M \geq 2$.

The specification and drawings also clearly show and describe that the number of parallel branches in the bank of synthesis filters and in the bank of analysis filters is "2M" (i.e., the double of the order, M, of the expander and said decimator), for example.

It is common for technical specifications to use variables or parameters for certain values, particularly for mathematical expressions. A person or ordinary skill in the art would understand that the character "M" in the specification and claims is an integer parameter and that "$M \geq 2$" means the parameter M can take on integer values greater than or equal to 2.

C. **"Branch" is a Well-Known Term**

Even further, the general concept of a "filter branch" is well-known. For example, this term appears in the following patents:

U.S. 4,825,396 (Analog Devices);

U.S. 5,963,854 (LG Products);

U.S. 3,737,813 (Siemens).

For example, U.S. Patent No. 4,825,396 shows filter branches 54 and 55 in FIG. 7.

For the above reasons, Applicant submits that claims 1, 12, 15, 16 and 20 are sufficiently definite (before and/or after the above-amendments).

Applicant requests that the claim rejection under §112, second paragraph, be withdrawn.

V. CLAIM REJECTIONS UNDER §102 AND §103

A. **Office Action - Fails to Address Applicant's Remarks**

Where the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it. M.P.E.P. §707(f). Even if the arguments are moot, the examiner must, however, address any arguments presented by the applicant which are still relevant to any references being applied. M.P.E.P. §707(f).

The Office Action repeats the following rejections from the prior action without addressing any of Applicant's remarks with respect to the differences between the claimed invention and the cited patents.

Claims 1-4, 6, 12 and 15-21 were rejected under §102(b) as being allegedly anticipated by Kober et al. U.S. Patent No. 6,252,535.

Claims 9, 11 and 14 were rejected under §103(a) as allegedly being unpatentable over Kober et al. in view of Applicant's admitted prior art (AAPA).

Claims 8 and 13 were rejected under §103(a) as allegedly being unpatentable over Kober et al.

Applicant respectfully requests that the following arguments be addressed by the Examiner:

B. **The Office Action Fails To Make a Prima Facie Case of Anticipation**

The Office Action states that, regarding claim 1,

> Kober discloses a "bank of synthesis filters, having M parallel branches . . ." and each "expander of order M . . .."

In contrast, claim 1 requires 2M parallel branches, each branch comprising an expander of order M. Thus, the Examiner's analysis fails to meet the elements of claim 1.

With the application of simple algebra, per claim 1, the number of parallel branches ("2M") in claim 1 is double the order ("M") of the expander.

The Office Action makes a similar error with respect to the demodulation step.

C. **The present Disclosure**

According to the present disclosure, the ratio between the number of branches (2M) and the order (M) of each expander and decimator is 2. In other words, there are more (twice) branches than the order of each expander and decimator.

One of the features of claim 1 is therefore the ratio between the number of branches (2M) and the order (M) of each expander and decimator.

D. **Prior Art**

According to the prior art, the number of branches is always less than the expander/decimator order.

On the contrary, according to claim 1, the number of branches is more than the expander/decimator order and specifically the double.

This approach is clearly new, and non obvious. There is no disclosure of this feature in the art, nor any suggestion to choose a greater value (2M) for the number of branches, and a fortiori, to choose this value as being exactly the double of the expander/decimator order.

1. Kober

Kober does indeed describe, particularly in relation to figure 4, a transmultiplexer structure. The filter bank 46 comprises M branches (numbered 44a to 44n) each comprising an expander numbered 64a to 64n.

Kober does not disclose or suggest that the number of branches is twice the order of expansion.

On the contrary, according to the method described in Kober, the number of branches (M) is typically equal to the order of decimation (M). Referring to the paragraph in column 4, lines 35 to 49, it is explicitly specified that an « M-fold decimation » is implemented and it is confirmed by figure 4 and by column 5, lines 33 to 35, that M is also the number of sub-branches or branches.

It is clear when reading the description that branch 44n is in fact the Mth branch.

Consequently, the method described in this document is classic: the number of sub-branches is equal to M, i.e. the expansion-decimation factor.

Kober does not in any way suggest, as already expressed, the specific approach of claim 1, which differentiates itself by the presence of 2M branches. This approach is not disclosed, nor is it suggested by this document.

KOBER, as well as the previously identified documents, confirm on the contrary, and as Applicant stated in response to the first Office Action, that the number of branches is, according to prior art, inferior or equal the order of decimation-expansion, and that the person skilled in the

art is persuaded that this should always be so.

The approach of claims 1-9 and 11-21, which goes against this assumption, is thus new and non-obvious in view of Kober et al. either alone or in combination with the AAPA.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,
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